



UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

EXAMINER

ART UNIT

PAPER NUMBER

6

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/649,084

Applicant(s)

HO et al.

Examiner

Lynne Edmondson

Art Unit

1725



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.

If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.

If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.

- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on May 21, 2001

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-11 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-11 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are objected to by the Examiner.

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) All b) Some* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO 892)

18) Interview Summary (PTO 413) Paper No. s

16) Notice of Draftsperson's Patent Drawing Review (PTO 948)

19) Notice of Informal Patent Application (PTO 152)

17) Information Disclosure Statement(s) (PTO 1449) Paper No. s

20) Other

Art Unit: 1725

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Quick et al. (USPN 5465899).

Quick teaches a wedge wire bonding apparatus comprising a bonding head, a longitudinal ultrasonic transducer (horn, 41 in figure 11) and workpiece supporting means (x-y table) wherein either the bond head or table may be rotated (col 2 lines 9-22) around a z axis (col 2 lines 63-66) or one may be fixed relative to the other. The bond head supporting means may be fixed in the x-y direction (movement in z direction and rotation only) with movement of the workpiece in the x-y direction (col 6 lines 46 - col 7 line 10 and figure 11) or may comprise means for rotary movement of the workpiece supporting means (fixed in the x-y direction) with x-y movement of the bonding tool (col 7 lines 12-45 and figure 13). Note that the stitch bond angle is 45 degrees (col 5 line 1) and the rotation is around the z axis, at least one of the angular positions around the z axis (between 0 and 360 degrees) would be 45 degrees (figure 10). An operator may observe the process from any angle since the bonding area is open (figures 11 and 13). As all of the

Art Unit: 1725

parts of controllably moveable, all are capable of remaining fixed relative to one another (col 7 lines 8-10 and lines 42-46). See also Quick claims 1-4, 7, 10-14 and 17.

2. Claims 1, 2 and 4-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Elles et al. (USPN 4239144).

Elles teaches a wedge wire bonder wherein the bonding tool moves through a 360 degree rotation (includes 45 degrees) (col 5 lines 18-35). Note in figure 13, bonds at a 45 degree angle. The bonding apparatus comprises a transducer having a longitudinal axis serving as a support for the bonding tool (col 6 lines 32-46). An operator can observe the process from a number of positions including a position where the transducer is pointing in the direction of the operator.

3. Claims 1, 3-5, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Cheng et al. (USPN 5897048).

Cheng teaches an ultrasonic wedge wire bonder (col 1 lines 43-60) comprising a bonding tool on a support and a workpiece supporting means. The bonding tool or workpiece may be moved rotationally about a z axis (fixed in the x-y direction) with the other is moved in the x-y direction (col 2 lines 48-67, col 5 lines 10-39 and figures 3 and 4). Note that the transducer (608 in figure 6, col 7 lines 41-51) has a longitudinal axis and is mounted for rotation movement. See also figure 5 and Cheng claim 1.

Art Unit: 1725

Response to Arguments

4. In response to applicant's argument that the references do not teach that the bond head lies on a dividing line between the X and Y axes at all times, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

In Quick figure 12 that the transducer can be rotated into a position such that the transducer axis lies at a 45 degree angle thereby lying along a line dividing the X and Y axes. The work holder may also be rotated (col 7 lines 12-22) or may remain fixed. As all the parts are capable of movement, all may also remained fixed in the apparatus. Although the transducer is capable of movement through 45 degrees it is also capable staying along the 45 degree line at all times. it noted that the instant claims are apparatus not method claims. Therefore the 102 (b) rejection of claim 1 as anticipated by Quick stands and now includes claims 2-11.

The Elles apparatus is also capable of stopping at a 45 degree angle (dividing line) to perform bonding (figure 13) and thereby has means for supporting the bondhead such that the longitudinal axis of the transducers can lie along a line dividing the X and Y axes. Therefore the 102 (b) rejection of claims 1, 2 and 4-9 as anticipated by Elles stands.

Art Unit: 1725

The Cheng transducer (608 in figure 6, col 7 lines 41-51) has a longitudinal axis and is mounted for rotation movement and thereby has means for supporting the bondhead such that the longitudinal axis of the transducers can lie along a line dividing the X and Y axes. Therefore the 102 (b) rejection of claims 1, 3-5, 10 as being anticipated by Cheng stands.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Elles et al. (USPN 4422568), Elles et al. (USPN 4361261), Gabaldon (USPN 5817848), Yoshida et al. (USPN 4039114), Kulicke, Jr. et al. (USPN 4073424), Chan et al. (USPN 4550871) and Horaleza et al. (USPN 6112973).

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 1725

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (703) 306-5699.

LRE

July 3, 2001

Handwritten:
To: Alexander L. Lee
re: 09/649084
Te 1725